

States patent 6,211,819, issued April 3, 2001). The rejections are respectfully traversed.

A. Rejection of claims 1-25 and 31-47 in view of Taylor

More specifically, the Examiner alleged that Taylor “disclose[s] a remote control station 12 that receives satellite tracking data from a master control station 18 and formats it and transmits it (Figure 2) to a remote receiver 14a-14c.” (Office Action, ¶13). The Examiner further stated that the satellite tracking data in Taylor “includes almanac data information that describes the orbital elements for each satellite.” The Examiner concluded that Taylor anticipates Applicants’ invention as recited in claims 1-25 and 31-47. In view of the above amendments, Applicants contend that Taylor does not anticipate claims 1-25 and 31-47.

Taylor teaches an aided GPS system, where user terminals receive an aiding signal in addition to the standard pseudo-random noise (PRN) signals transmitted by GPS satellites. (See Taylor, col. 5, lines 1-14). In particular, a remote control station receives almanac data from a master control station or from the satellites themselves. (Taylor, col. 5, line 58 through col. 6, line 18). The remote control station extracts satellite coordinate data from the almanac data in the form of X, Y, and Z spatial coordinates, and transmits the satellite coordinate data to a geostationary satellite. The geostationary satellite broadcasts the satellite position information to the user terminals. (Taylor, Figure 1). The satellite coordinate data broadcast by the geostationary satellite are instantaneous satellite coordinates of four pre-selected GPS satellites. (Taylor, col. 6, lines 46-48 and col. 6, lines 57-68).

Taylor does not teach or suggest, however, Applicants’ invention as recited in amended claim 1. Namely, Taylor does not teach or suggest representing a portion of satellite tracking data that is valid for at least four hours in a format supported by a remote receiver. Specifically, Applicants’ claim 1 positively recites:

“A method for distributing satellite tracking data to a remote receiver comprising:
receiving satellite tracking data from a satellite control station;
representing at least a portion of said satellite tracking data in a format supported by the remote receiver, said at least a portion of said satellite tracking data being valid for at least four hours; and

transmitting the formatted data to the remote receiver.” (Emphasis added).

Claim 1 has been amended to clarify features of the invention Applicants’ consider inventive. A satellite control station includes many overlapping blocks of satellite tracking data, each block being valid over a particular window of time. For example, one block of satellite tracking data may comprise ephemeris data that is valid for a period of four hours. One or more of these blocks may then be formatted and transmitted to a remote receiver, the one or more blocks being valid for at least four hours. (See Applicants’ specification, ¶¶24).

In contrast with Applicants’ invention, Taylor does not teach or suggest transmitting satellite tracking data being valid for at least four hours to a remote receiver. Rather, Taylor broadcasts instantaneous satellite coordinates to a user terminal. Broadcasting instantaneous satellite coordinates fails to teach or suggest transmitting formatted satellite tracking data that is valid for at least four hours to a remote receiver.

“Anticipation requires the presence in a single prior art reference disclosure of each and every element of the claimed invention, arranged as in the claim.” Lindemann Maschinenfabrik GmbH v. American Hoist & Derrick Co., 221 USPQ 481, 485 (Fed. Cir. 1984) (emphasis added). Since Taylor does not teach representing a portion of satellite tracking data that is valid for at least four hours in a format supported by a remote receiver, Taylor does not teach each and every element of Applicants’ claim 1.

Therefore, Applicants contend that the invention recited in claim 1 is not anticipated by Taylor and, as such, fully satisfies the requirements of 35 U.S.C. §102.

Moreover, claim 31 recites an apparatus for distributing satellite tracking data having relevant features similar to those recited in claim 1. For the same reasons discussed above, Applicants contend that the invention recited in claim 31 is also not anticipated by Taylor and, as such, fully satisfies the requirements of 35 U.S.C. §102. Finally, claims 2-25 and 32-47 depend, either directly or indirectly, from claims 1 and 31 and recite additional features therefor. Since Taylor does not anticipate Applicants’

invention as recited in claims 1 and 31, dependent claims 2-25 and 32-47 are also not anticipated and are allowable.

B. Rejection of claims 1-25 and 31-47 in view of King

More specifically, the Examiner alleged that King “disclose[s]...distributing satellite trajectory data to a mobile user 302 including a base station 302 that receives satellite ephemeris and clock correction information and formats it for transmission to the mobile user.” (Office Action, ¶13). The Examiner stated that the “information may be received at a mobile switching center 306 and transmitted to the base station.” The Examiner concluded that King anticipates Applicants’ invention as recited in claims 1-25 and 31-47.

King generally teaches receiving satellite ephemeris and clock correction data at a base station, producing satellite position information from the ephemeris and clock correction data, and transmitting the satellite position information to a mobile device. (See King, Abstract). In one embodiment, King teaches receiving the ephemeris and clock correction data from the satellites at a mobile switching center and communicating the ephemeris and clock correction data to the base station. (King, col. 4, lines 12-25). King does not disclose receiving the ephemeris and clock correction data from anywhere else but the satellites themselves.

In view of the forgoing, King does not teach or suggest Applicants’ invention as recited in claim 1. Namely, King does not teach receiving satellite tracking data from a satellite control station. While King teaches receiving ephemeris and clock correction data from a mobile switching center, the mobile switching center is not a satellite control station. The mobile switching center provides control for the wireless communication system, such as handoffs between base stations. (King, col. 3, lines 33-50). The mobile switching center does not upload satellite tracking data to the satellites. Rather, the mobile switching center in King receives such satellite tracking data from the satellites themselves. King is devoid of any discussion of receiving satellite tracking data from a satellite control station and thus fails to teach each and every element of

Applicants' claim 1. Therefore, Applicants contend that the invention of claim 1 is not anticipated by King and, as such, fully satisfies the requirements of 35 U.S.C. §102.

Moreover, claim 31 recites an apparatus for distributing satellite tracking data having relevant features similar to those recited in claim 1. For the same reasons discussed above, Applicants contend that the invention recited in claim 31 is also not anticipated by King and, as such, fully satisfies the requirements of 35 U.S.C. §102. Finally, claims 2-25 and 32-47 depend, either directly or indirectly, from claims 1 and 31 and recite additional features therefor. Since King does not anticipate Applicants' invention as recited in claims 1 and 31, dependent claims 2-25 and 32-47 are also not anticipated and are allowable.

III. REJECTION OF CLAIMS UNDER 35 U.S.C. §103(a)

The Examiner rejected claims 26-28 and 48 as being unpatentable over Taylor in view of Moore ("Satellite Navigation Information Services," IEEE Colloquium on Implementation of GNSS, published 1995). The Examiner also rejected claims 26-28 and 48 as being unpatentable over King in view of Moore. The rejections are respectfully traversed.

A. Rejection of claims 26-28 and 48 over Taylor in view of Moore

The Examiner conceded that Taylor fails to disclose transmission of information from a control station to a remote receiver via the Internet. (Office Action, ¶6). The Examiner alleged, however, that Moore discloses that it is well known to provide satellite navigation information via the Internet. The Examiner concluded that it would have been obvious to modify the control station of Taylor to transmit satellite navigation information to the remote receiver via the Internet, as taught by Moore.

Moore generally discusses the available sources of information on satellite navigation systems. (See Moore, Abstract, page 6/1). The information, such as status messages, almanac data, or ephemeris data, is provided via a server connected to the Internet. (Moore, page 6/2).

Claims 26-28 and 48 depend, either directly or indirectly, from claims 1 and 31. The cited references, either singly or in any permissible combination, do not teach, suggest, or otherwise render obvious Applicants' invention as recited in claims 1 and 31. Namely, the alleged combination fails to teach or suggest representing a portion of satellite tracking data that is valid for at least four hours in a format supported by a remote receiver. As discussed above in Section II.A, Taylor does not teach or suggest Applicants' invention of claim 1. Moore is devoid of any teaching or suggestion of receiving satellite tracking data from a satellite control station. Rather, Moore is concerned with downloading information from the Internet. Since neither Taylor nor Moore teaches or suggests transmitting formatted satellite tracking data that is valid for at least four hours to a remote receiver, no conceivable combination of Taylor and Moore teaches or suggests Applicants' invention of claims 1 and 31. Therefore, Applicants contend that claims 26-28 and 48, which depend from claims 1 and 31, are patentable over Taylor and Moore and, as such, fully satisfy the requirements of 35 U.S.C. §103.

B. Rejection of claims 26-28 and 48 over King in view of Moore

The Examiner conceded that King does not specifically disclose the use of an Internet link between a satellite control station and a remote receiver, nor the control of transmission during times of reduced congestion or cost. (Office Action, ¶16). The Examiner alleged, however, that Moore teaches that it is well known to provide satellite navigation services via the Internet. The Examiner concluded that it would have been obvious to modify the base station of King to transmit satellite navigation information via the Internet as taught by Moore.

Claims 26-28 and 48 depend, either directly or indirectly, from claims 1 and 31. The cited references, either singly or in any permissible combination, do not teach, suggest, or otherwise render obvious Applicants' invention as recited in claims 1 and 31. Namely, the alleged combination fails to teach or suggest receiving satellite tracking data from a satellite control station. As discussed above in Section II.A, King does not teach or suggest Applicants' invention of claim 1. Moore is devoid of any

teaching or suggestion of receiving satellite tracking data from a satellite control station. Rather, Moore is concerned with downloading information from the Internet. Since neither King nor Moore teaches or suggests receiving satellite tracking data from a satellite control station, no conceivable combination of King and Moore teaches or suggests Applicants' invention of claims 1 and 31. Therefore, Applicants contend that claims 26-28 and 48, which depend from claims 1 and 31, are patentable over King and Moore and, as such, fully satisfy the requirements of 35 U.S.C. §103.

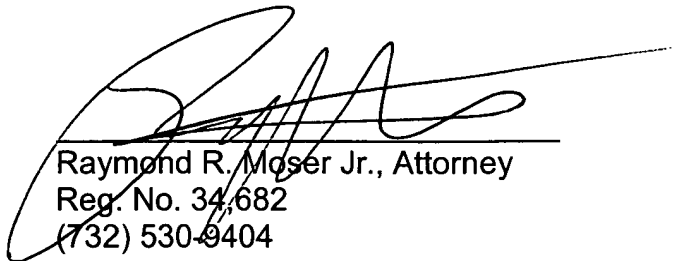
CONCLUSION

Thus, Applicants submit that none of the claims presently in the application are anticipated under the provisions of 35 U.S.C. § 102 or obvious under the provisions of 35 U.S.C. § 103. Consequently, Applicants believe that all these claims are presently in condition for allowance. Accordingly, both reconsideration of this application and its swift passage to issue are earnestly solicited.

If, however, the Examiner believes that there are any unresolved issues requiring adverse final action in any of the claims now pending in the application, it is requested that the Examiner telephone Mr. Raymond R Moser Jr., Esq. at (732) 530-9404 so that appropriate arrangements can be made for resolving such issues as expeditiously as possible.

Respectfully submitted,

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APPENDIX I
MARKED-UP VERSION OF AMENDED CLAIMS

1. (Amended) A method for distributing satellite tracking data to a remote receiver comprising:

receiving satellite tracking data from a satellite control station;

representing at least a portion of said satellite tracking data in a format supported by the remote receiver, said at least a portion of said satellite tracking data being valid for at least four hours; and

transmitting the formatted data to the remote receiver.

5. (Amended) The method of [claim 3a]claim 3 where the satellite tracking data further comprises data representative of the future satellite clock offsets.

31. (Amended) Apparatus for distributing satellite tracking data to a remote receiver comprising:

a computer for receiving data from a satellite control station, accessing at least a portion of said satellite tracking data from a memory, and formatting said at least a portion of said satellite tracking data in a format supported by the remote receiver, said at least a portion of said satellite tracking data being valid for at least four hours; and means for transmitting the formatted data to the remote receiver.